

2012 NIBIB Training Grantees Meeting

Abstract Authors & Titles



Themes

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Magnetic Resonance

1. Navigator-Free Self-Gated Cine MR Imaging Using 2D Cartesian Golden Step Phase Encoding

Liheng Guo, Ozan Sayin, J. Andrew Derbyshire, Daniel A. Herzka
Johns Hopkins University

2. High resolution, large dynamic range measurement of MR phase maps

Joseph Dagher, Timothy Reese, Georges El Fakhri, Ali Bilgin
Massachusetts General Hospital; Harvard University

3. Magnetization Spoiling in Radial FLASH Contrast-Enhanced MR Digital Subtraction Angiography

Parmede Vakil, Sameer A. Ansari, Michael C Hurley, Himanshu Bhat, Timothy J. Carroll
Northwestern University, Dept. of Biomedical Engineering

4. Use of Real Time MRI for Measurement of Post-Infarct Cardiac Remodeling via Load-Independent Indices

Francisco Contijoch, Walter RT Witschey, Jeremy R McGarvey, Melissa M Levack, Gerald A Zsido, Manabu Takebe, Norhiro Kondo, Christen Dillard, Joseph H Gorman III, James J Pilla, Robert C Gorman
University of Pennsylvania



5. Molecular Correlates to in vivo Hyperpolarized [1-13C] Dehydroascorbate Reduction

Victor Sai, Kayvan Keshari, Romelyn Delos Santos, John Kurhanewicz, David M. Wilson

University of California, San Francisco

6. In Vivo Hyperpolarized Spectroscopy of Hypoxia Inducible Factor-1 Activity in Murine Sarcoma

Ryan M Davis, Ruby Qiu, Minsi Zhang, David Kirsch, Warren S Warren

Duke University

7. Chemical Exchange Saturation Transfer (CEST) Imaging of the Spinal Cord at 7T

Feliks Kogan, Anup Singh, Mohammad Haris, Kejia Cai, Hari Hariharan, Ravinder Reddy

University Of Pennsylvania

8. A Novel Approach for Global Noise Reduction in Resting-State fMRI: APPLECOR

Michael Marx, Kim Butts Pauly, Catie Chang

Stanford University

9. Single Cardiac Cycle Multipoint T1 Mapping with Radial Acquisition

David Chen, Behzad Sharif, Rohan Dharmakumar, Debiao Li

Northwestern University



10. Magnetic Resonance Thermometry at 7T for Real-Time Control of Ultrasound Induced Mild Hyperthermia

Brett Z. Fite, Yu Liu, Dustin E. Kruse, Charles F. Caskey, Jeffrey H. Walton, Chun-Yen Lai, Lisa M. Mahakian, Benoit Larrat, Erik Dumont, Katherine W. Ferrara

University of California, Davis

11. Quantifying Myocardial Fibrosis in Hypertensive Left Ventricular Hypertrophy using T1 Mapping

Rajesh Janardhanan, Nebiyu Adenaw, Ronny S. Jiji, Jeremy Brooks, Frederick H. Epstein, Christopher M. Kramer, Michael Salerno

University of Virginia

12. Manganese--Enhanced MRI in the Evaluation of Cell--Based Therapy

Paul Kim, Ildiko Toma, Yongquan Gong, Phillip Harnish, Phillip Yang

Stanford University

13. Feasibility of Quantitative ^{31}P NMR Imaging of Cortical Bone

Alan C. Seifert, Alexander C. Wright, Cheng Li, Suzanne L. Wehrli, Felix W. Wehrli

University of Pennsylvania

14. Advanced MR Molecular Imaging through Contrast Modulation of Contrast Agents

Bo Zhu, Thomas Witzel, Bruce Rosen, Lawrence Wald

Massachusetts Institute of Technology



15. Exercise/rest calf muscle perfusion and perfusion reserve using contrast-enhanced MRI in PAD

Ronny S. Jiji, Amy W. Pollak, Frederick H. Epstein, Patrick F. Antkowiak, Craig H. Meyer, Arthur Weltman, Joseph M. DiMaria, Jennifer R. Hunter, John M. Christopher, Christopher M. Kramer

University of Virginia

16. High temporal resolution quantification of global CMRO₂ during apneic challenge

Zach Rodgers, Varsha Jain, Michael Langham, Jeremy Magland, Felix Wehrli

University of Pennsylvania

Optical Imaging

17. Custom multiphoton microscope for long-term imaging of neurons under chronic closed-loop stimulation

W. Alexander Calhoun, Ushnik Ghosh, Eric Eisner, Sam Rakowski, Steve M. Potter

Georgia Institute of Technology, Dept. of Biomedical Engineering

18. Imaging the Initiation of Inflammation in the Brain with Intravital Two-photon Microscopy

Deborah Sim Barkauskas, Jay Myers, Alex Huang

Case Western Reserve University



19. Assessing Margins via Oblique Incidence Diffuse Reflectance Spectroscopy and Confocal Microendoscopy

Jonathan Brand, Dr. Arthur Gmitro, Dr. Bhaskar Banerjee, Dr. Andrew Rouse
University of Arizona College of Optical Sciences

20. Three-dimensional oxygen mapping and characterization of stroke pathophysiology

Anthony J. Salvaggio, S.M. Shams Kazmi, Andrew K. Dunn
The University of Texas at Austin

21. Super-Resolution Structured Illumination Microscopy of Non-Fluorescent, Coherently Scattering Sample

Joseph Izatt, Al-Hafeez Dhalla
Duke University

22. Direct photoactivation of neurons by laser deposition of thermal energy

Benjamin Migliori, Massimiliano Di Ventra, William Kristan Jr
University of California, San Diego

23. Multi-Contrast Optical Coherence Tomography for Neuroimaging

Hui Wang, Adam Black, Thedoen Netoff, Aviva Abosch, Taner Akkin
University of Minnesota



24. Defining the molecular basis for immune recognition of altered lipid membranes

Gregory Tietjen, Chiu-Hao Chen, James Crooks, Ernesto Vargas, Kathleen Cao, Charles Heffern, Benoit Roux, Binhua Lin, Mark Schlossman, Ka Yee Lee, Erin Adams

University of Chicago

X-Ray

25. Trauma Imaging with Color Contrast for Color CT: In Vivo Use of Complementary Contrast at DECT

John Mongan, MD, PhD, Samira Rathnayake, Yanjun Fu, PhD, Miguel Cabarrus, MD, Benjamin M. Yeh, MD

University of California, San Francisco

26. Task-based strategy for optimized contrast enhanced breast imaging in mammography and tomosynthesis

Lynda Ikejimba, Nooshin Kiarashi, Yuan Lin, Baiyu Chen, Sujata Ghate, Moustafa Zerhouni, Ehsan Samei, Joseph Lo

Duke University

27. Lung Texture in Serial Thoracic CT Scans: Assessment of Change Introduced by Image Registration

Alexandra R Cunliffe, Hania Al-Hallaq, Ph.D., Zacariah E Labby, Ph.D., Charles Pelizzari, Ph.D., Christopher Straus, M.D., William Sensakovic, Ph.D., Michelle Ludwig, Samuel G Armato III, Ph.D.

University of Chicago, Medical Physics



28. Bariatric Arterial Embolization with X-ray-visible embolic beads and c-arm cone beam CT for increase

Paul Allen DiCamillo, Weijie Beh, Charles Hu, Tza-Huei Wang, Hai-Quan Mao, Dara L. Kraitchman, Clifford R. Weiss

Johns Hopkins University, Dept. of Radiology

29. Objective Evaluation of CT Image Reconstruction Algorithms

Adrian Sanchez, Emil Sidky, Xiaochuan Pan

University of Chicago

30. Neutron Dosimetry in a Voxelized Anthropomorphic Phantom Using Monte Carlo Methods

Matthew Belley, Anuj Kapadia

Duke University, Medical Physics

Nuclear Medicine

31. Quantification of Tc-99m Sestamibi in asymptomatic breast tissue using dedicated breast SPECT-CT

Steve D Mann, Kristy L Perez, Jainil P Shah, Martin P Tornai

Duke University

32. Automated ¹⁸F Labeling of Sucrose for Transporter Studies in Plants via PET

Tom Brossard, David Rotsch, Vikram Gaddam, Michael Harmata, J. David Robertson, David Braun

University of Missouri



33. Development and Quantification of a Novel Intravascular Catheter-Based Radionuclide Imaging System

RT. Zaman, CM.Carpenter, G. Pratz, C. Sun, L. Xing, MV. McConnell

Stanford University School of Medicine

34. ^{72}As , ^{77}As labeled radiopharmaceuticals for use as diagnostic imaging and/or therapeutic agents

Anthony J. DeGraffenreid, Don Wycoff, Ryan Morrow, Beau Ballard, Cathy S. Cutler, Alan R. Ketring, Michael Fassbender, Silvia S. Jurisson

University of Missouri - Columbia

Ultrasound

35. Evaluation of AVUS treatment effects by DCE-US, DCE-MR, and histopathology.

Stephen Hunt, MD, PhD, Andrew K Wood, DVM, Michael Soulen, MD, Terence Gade, MD, PhD, Steve Pickup, PhD, Chandra Sehgal, PhD

University of Pennsylvania

36. Full-Field Transmission Ultrasound Imaging System Employing an Acousto-Optic (AO) Detector

J.R. Rosenfield, J.S. Sandhu, J.K. Tawiah, P.J. La Riviere

The University of Chicago, Dept. of Radiology



37. Towards imaging inflammation with ultrasound based molecular imaging.

Olson, Emilia, Wu, Clark, Yi, Boemha, Gao, Wei, Eghtedari, Mohammad,
Orozco-Holguin, Jahir, Wang, Joseph
University of California, San Diego

38. Application of Synthetic Aperture Focusing to Short-Lag Spatial Coherence Imaging

Nick Bottenus, Dongwoon Hyun, Jeremy Dahl, Gregg Trahey, Brett Byram
Duke University

39. Ultrasound Contrast Agents to Enhance Localized Drug Delivery in Cancer

Anna Sorace, Reshu Saini, Jason Warram, Heidi Umphrey, Kurt Zinn, Kenneth Hoyt
University of Alabama at Birmingham

Imaging Agents & Molecular Probes

40. Cathepsin K Radioligands for In Vivo Imaging

Melissa E. Topper, Xia Shao, Peter J. H. Scott, Michael R. Kilbourn
University of Michigan

41. In Vivo Bacteriophage Display Selection for an Improved Breast Cancer Targeting Peptide

Benjamin Larimer, Susan Deutscher
University of Missouri



42. Quantitative susceptibility mapping calculation dependence on contrast agent and field strength

Russell Dibb, Wei Li, Chunlei Liu

Duke University

43. Validation of anti-TEM1 and 5 antibodies for imaging of tumor neovasculature in a GBM mouse model

Collin M. Torok, MD, Mrudula Pullambhatla, MS, , Martin G. Pomper, MD, PhD, Catherine A. Foss, PhD

Johns Hopkins Hospital

44. Nanodiamond-Gadolinium (ND-Gd) Coupling to Catheter Surfaces for Enhanced Device Visualization

Erik Robinson, Dean Ho, Tom Meade, Lisa Manus, Daniel Mastarone

Northwestern University

Image-Guided Therapies & Interventions

45. All-Fiber Optic Endoscopic Catheter System for Simultaneous OCT and Fluorescence Imaging

Jessica Mavadia, Jiefeng Xi, Yongping Chen, Xingde Li

Johns Hopkins University



46. A semi-automated vascular access system for preclinical models

Brittany N. Berry-Pusey, Yen-Chi Chang, Stephen W. Prince, Kevin Chu, Waldemar Ladno, John David, Robert Silverman, Richard Taschereau, David Stout, Tsu-Chin Tsao, Arion Hadjioannou

University of California, Los Angeles

47. Multi-Modality Rigid and Non-Rigid Prostate Image Registration to Whole- Mount Histology

Samantha L. Lipman, Christina M.L. Hsu, Mark L. Palmeri, Thomas J. Polascik, Matthew S. Davenport, Christopher Kauffman, Rajan T. Gupta, Evan Kulbacki, John Madden, Kathryn R. Nightingale

Duke University

48. Accurate High-Intensity Focused Ultrasound Ablation in a Porcine Liver Model through Integration of Real-Time Image Guidance, Robotic Navigation, and Elastographic Monitoring

Daniel A. Carnegie, Emad M. Boctor, Xiaoyu Guo, Hyun-Jae Kang, Nishikant Deshmukh, Pezhman Foroughi, Everette Burdette, Chris Diederich, Robert J. Webster III, Jessica Burgner, Michael A. Choti

Johns Hopkins School of Medicine, Div. of Surgical Oncology

Image Processing, Displays & Perception

49. Localizing dysplasia for digitally-aided prognosis of Barrett's Esophagus

Virginia M. Burger

University of Pittsburgh



50. Improved T1 Mapping Accuracy by Accounting for the Flip Angle Profile in SSFP Imaging

Mitchell Cooper, Thanh Nguyen, Pascal Spincemaille, Martin Prince, Jonathan Weinsaft, Yi Wang

Cornell University; Weill Cornell Med. College

51. Atlas-Based MR Inhomogeneity Correction

Kwame S. Kuttan, Johnny T. Hsu, Susumu Mori, Michael I. Miller

Johns Hopkins University

52. Breathing a little easier, or not: tracking and analyzing lung changes with CT & PRM

Jennifer L. Boes, Meilan K. Han, Charles R. Meyer, Alnawaz Rehemtulla, Ella A. Kazerooni, Fernando J. Martinez, Brian D. Ross, Craig J. Galbán

The University of Michigan

53. Myocardial Lesion Detectability in PET Scan

Eugene S. Mananga, Jinsong Ouyang, Ali A. Bonab, Yu-Hua D. Fang, Georges El Fakhri

Massachusetts General Hospital; Harvard Medical School

54. Distinction Between Normal White Matter And Glioma Infiltration By SS-OCT In Human Ex Vivo Tissue

Carmen Kut, Shaan Raza, Jiefeng Xi, Jessica Mavadia, Hugo Guerero-Cazares, Elliot McVeigh, Xingde Li

Johns Hopkins University



55. An Image Derived Input Function for Simultaneous Neurological MR/PET Imaging

Ciprian Catana

Harvard Medical School

56. Spatial heterogeneity of patterns of cortical amyloid deposition in aging and its relationship to me

Rachel Aine Yotter, Jimit Doshi, Vanessa Clark, Jitka Sojkova, Yun Zhou, Dean F. Wong, Luigi Ferrucci, Susan M. Resnick, Christos Davatzikos

University of Pennsylvania, Section of Biomedical Image Analysis

57. Searching in three dimensions: How do radiologists move their eyes when viewing Chest CTs?

Trafton Drew, Melissa Le-Hoa Vo, Francine L. Jacobson, Steven E. Seltzer, Jeremy M. Wolfe

Brigham and Women's Hospital

58. Imaging Features Associated with Malignant Foci on Breast MRI

Myers KS, Kamel I

Johns Hopkins Hospital

Bioinformatics

59. A whole genome assembly of the Black-breasted Hillstar (*Oreotrochilus melanogaster*)

Jessica Weber, Jeremy Edwards, Christopher Witt

University of New Mexico



60. Aortic Wall Thickness: An Independent Risk Factor for Aortic Dissection?

Hadas Shiran, MD, Justin Odegaard, MD, PhD, Gerald Berry, MD, D. Craig Miller, MD, Michael Fischbein, MD, PhD, David Liang, MD, PhD
Stanford University

Modeling / Simulations

61. Hemodynamic characterization of Aortic Valve Bypass Surgery using CFD models based on MRA and PCMR

Adrian Lam, BS, Muralidhar Padala, PhD, Vinod Thourani, MD, John Oshinski, PhD
Georgia Institute of Technology

62. Computational studies on NapH1, a bacterial vanadium-dependent haloperoxidase

Amanda Li, Peter Bernhardt, Akimasa Miyana, Bradley S. Moore, Michael Gilson
University of California, San Diego

63. CellOrganizer: Image derived generative modeling

Devin Sullivan, Ivan Cao-Berg, Robert F. Murphy
Carnegie Mellon University; University of Pittsburgh

64. Error Analysis and Correction of ADC Measurements for Gradient Non-Linearity

Dariya I Malyarenko, Brian D Ross, J. Brian Fowlkes, Thomas L. Chenevert
University of Michigan, Dept. of Radiology, MRI



65. Identifying intermediate states within folding simulations

Andrej Savol, Chakra Chennubhotla

University of Pittsburgh

66. A multispecies continuum model of in vitro HGF-induced tumor spheroid growth.

Anna Konstorum, Stephanie Sprowl, Hamed Youssefpour, Dr. Arthur Lander, Dr. Marian Waterman, Dr. John Lowengrub

University of California, Irvine

Neural Engineering & Rehabilitation

67. The Hyperdirect Pathway as it Pertains to Side Effects Associated with Deep Brain Stimulation

Kabilar Gunalan, Angela M. Noecker, Kyle Taljan, Ken E. Sakaie, Cameron C. McIntyre

Case Western Reserve University

68. Combining Dense Array EEG and Transcranial Magnetic Stimulation to Assess Cortical Reactivity and Co

Nessa Johnson, Bin He

University of Minnesota

69. Effect of global brain state on sensory processing by neurons in primary visual cortex

Yatsenko, D, Foudarakis, M, Saggau, P

Baylor College of Medicine



70. Patterned sensory stimulation reduces urethral spasms and improves bladder voiding after spinal cord

Jaime L. McCoin, Kenneth J. Gustafson, Ph.D

Case Western Reserve University

71. Neuronal oscillatory correlates associated with working memory performance

Heister D, Diwakar M, Nichols S, Robb A, Angeles A, Tal, O, Harrington, D, Lee, RR, Huang, MX

University of California, San Diego

72. An Optogenetic Micro-Electrocorticography Neural Interface

Thomas Richner, Sanitta Thongpang, Sarah Brodnick, Lisa Krugner-Higby, Justin C. Williams

University of Wisconsin

73. Characterization and detection of walking-stair transitions in able-bodied ambulation

Joshua Peng, Levi Hargrove

Northwestern University

Biomechanics

74. The intensity-dependent release of triggered reactions modulates the long-latency stretch reflex

Rosalind L. Heckman, Claire F. Honeycutt, Eric J. Perreault

Northwestern University



75. Impact of Parity on the Mechanical Properties of the Sheep Vagina

Katrina Knight, BS, Andrew Feola, PhD, Pamela Moalli, MD, PhD, Steven Abramowitch, PhD

University of Pittsburgh

Biomedical Devices/Platforms

76. Biomechanical Evaluation of Bioabsorbable Polymer Interference Screws for ACL Reconstruction

K.E. Kim, M.M. Tei, A.N. Pickering, K.F. Farraro, S.L-Y. Woo

University of Pittsburgh

77. A Sound-to-Touch Sensory Substitution Device for the Severely Hearing Impaired

Scott Novich, David M. Eagleman

Rice University; Baylor College of Medicine

78. Phase Aliasing Enhancement to DUET Blind Speech Separation Algorithm

Ryan Ritch, Jack Xin

University of California, Irvine

79. A System for Real Time Visualization of Platelet Deposition onto Opaque Surfaces

Megan A. Jamiolkowski, Joshua R. Woolley, Sang-Ho Ye, Salim Olia, Marina Kameneva, James F. Antaki, William R. Wagner

University of Pittsburgh



80. Micro-scale Optofluidic Ring Resonator Sensors for Micro Gas Chromatographs

Kee Scholten, Xudong Fan, Edward Zellers

University of Michigan

81. Moire Wavefront Sensor as an Alternative to the Shack-Hartmann for Ophthalmic Applications.

Carl Chancy

University of Arizona College of Optical Sciences

82. User-friendly Hydrodynamic Single Cell Capture Devices for Cancer Stem Cell Screening

Patrick Ingram, Jaehoon Chung, Kun Yang, Ronald J Buckanovich, Euisik Yoon

University of Michigan; Dept of Biomedical Engineering

83. Quantitative testing of robust dry reagent storage with filter paper

Grace Wu, Jaya Srivastava, Muhammad Zaman

Boston University

84. A Paper and Plastic Device for Performing Recombinase-Polymerase Amplification of HIV DNA

Brittany A. Rohrman, Rebecca R. Richards-Kortum

Rice University

85. Elucidating genes and pathways in lipid storage and distribution in *C. elegans* by novel microfluidic

Maria Elena Casas, Hang Lu

Georgia Institute of Technology



86. Microfluidic technology for the isolation of pathogenic bacteria in bloodstream infections

Lorenzo D'Amico, Thomas E. Anderson, Javier A. Adachi, Peter R.C. Gascoyne
University of Texas at Austin

87. Tailoring the Trajectory of Cell Rolling with Cytotactic Surfaces

Collin D. Edington, Hironobu Murata, Richard Koepsel, Jill Andersen, Sungeun Eom, Takeo Kanade, Anna C. Balazs, German Kolmakov, Carsen Kline, Daniel McKeel, Zvi Liron, Alan J. Russell
University of Pittsburgh

Tissue Engineering

88. Bone regeneration in a calvarial critical size defect using polymer/mineral composite scaffolds.

Ophir Ortiz, Racquel Z. LeGeros, Joachim Kohn
Rutgers University, New Jersey Center for Biomaterials

89. More Efficient Generation of Human Induced Pluripotent Stem Cells from Fetal Hepatocytes than Adult Hepatocytes in Feeder-Free Conditions

Marc C. Hansel, Roberto Gramignoli, William Blake, Julio Davila, Kristen Skvorak, Kenneth Dorko, Veysel Tahan, Edgar Tafaleng, Jorge Guzman-Lepe, Alejandro Soto-Gutierrez, Ira J. Fox
University of Pittsburgh



90. Gd(III)-DNA Gold Nanoconjugates for Cell Tracking During Neural Stem Cell Implantation Therapy

Matthew Rotz, Thomas J. Meade, Francesca Nicholls, Michel Modo

Northwestern University

91. Myofibroblastic response of AVICs on embryonic leaflet stiffness substrates

Young Wook Chun, Joey V. Barnett, W. David Merryman

Vanderbilt University

92. Systems analysis of intertissue signaling dynamics in tooth organogenesis

Daniel J. O'Connell, Joshua W. K. Ho, Peter J. Park, Richard L. Maas

Harvard Medical School

93. Delivery of Platelet-Derived Growth Factor from Bone-Mimetic Electrospun Matrices as a Chemotactic F

Matthew C. Phipps, Yuanyuan Xu, MD, Susan L. Bellis, PhD

University of Alabama at Birmingham

94. Targeted Insertion of a Selectable Lineage Tracing Reporter in Human Pluripotent Stem Cells

Jay Gantz, Nathan Palpant, Robert Welikson, Stephen Hauschka, Charles Murry, Michael Laflamme

University of Washington



95. A miRNA expression signature associated with Wnt/BMP4 GRN during molar morphogenesis

Ivan T. Rebustini, Daniel J. O'Connell, Joshua W. K. Ho, Xiu-Ping Wang,
Richard L. Maas

Brigham and Women's Hospital; Harvard Medical School

96. Stem Cell Therapy: Not All Approaches Are Created Equal

Mai T. Lam, Yongquan Gong, Joseph C. Wu, Michael T. Longaker

Stanford University

97. Analysis of Cellular Rigidity Sensing Using Composite Materials

Stephanie Wong, Wei-hui Guo, Yu-li Wang

Carnegie Mellon University

98. Engineered macrophages for the application of a healing cardiovascular tissue engineering scaffold

Karen V Eaton, Mei-Ting Wu, Hsueh YL Yang, Marta Scatena, Cecilia M Giachelli

University of Washington

99. Characterizing Forces Exerted by Mesenchymal Stem Cell Aggregates During Tissue Regeneration

Rachel Simmons, Michelle Dawson

Georgia Institute of Technology



100. Regulatory Network Discovery Using Temporal DNase-seq

Charles W. O'Donnell, Tatsu Hashimoto, Sophie Lewis, Richard Sherwood,
Douglas A. Melton, David K. Gifford

Harvard University; Massachusetts Institute of Technology

101. Characterization of the incisor stem cell niche using gene co-expression network analysis

Kerstin Seidel, Michael Oldham, Richard Maas, Ophir Klein

University of California, San Francisco

102. Towards quantification of secreted matrix metalloproteinases during branching morphogenesis

Somin Lee, Paul Alivisatos, Mina Bissell

Lawrence Berkeley National Laboratory

103. Investigating the role of morphogens in early tooth formation through in vitro 3D gradient system

Shilpa Sant, Chia-Cheng Li, Abinaya Ravisankar, Richard L Maas, Ali Khademhosseini

Brigham and Womens Hospital

104. Platelet Derived Growth Factor Receptor Alpha (PDGFR?): Dispensable or important for liver regeneration?

Prince Awuah, Kari Nejak-Bowen, Amalea Misse, Sucha Singh, SP Monga

University of Pittsburgh



Advanced Biomaterials

105. Electrospun Janus Meshes

Kristie M. Charoen, Mark W. Grinstaff

Boston University

106. Adeno-Associated Virus Nanoparticles as Scaffolds For Gold Nucleation

Chris Dempsey, Rebekah Drezek, Dave Evans, Junghae Suh

Rice University

107. Microwave Plasma CVD Diamond Employing Interlayers on 440c and 316 Stainless Steel

Jared Ballinger, Shane Aaron Catledge, Vinoy Thomas

University of Alabama at Birmingham

Drug Delivery

108. Synapse-directed delivery of immunomodulators using T-cell-conjugated nanoparticles

Matthias T. Stephan, Sirkka B. Stephan, S. Peter Bak, Jianzhu Chen, Darrell J. Irvine

Massachusetts Institute of Technology

109. Raman Labeled Gold Nanostars as Photodynamic Therapy (PDT) Drug Carriers for Theranostics

Andrew M. Fales, Hsiangkuo Yuan, Tuan Vo-Dinh

Duke University



110. Synergistic Silencing: Combinations of Lipid-like Materials for Improved siRNA Delivery

Kathryn Whitehead, Daniel Anderson, Robert Langer

Massachusetts Institute of Technology

111. Size-Stable Solid Lipid Nanoparticles loaded with Gd-DOTA for Magnetic Resonance Imaging

Erica Andreozzi, Angelique Louie, Marc Dhenain, Peter Wang

University of California, Davis

112. 5FC based gene therapy and its combination with radiation.

Gilmer Valdes, Keisuke Iwamoto, Noriyuki Kasahara, Takahashi Masamichi

University of California, Los Angeles

113. Imaging exposes the unique voyage of nanoparticles in tumor microenvironment

Randall Toy, Pubudu M. Peiris, Elliott Hayden, Elizabeth Doolittle, Aaron Abramowski, Morgan Tam, Peter Vicente, Jenna Pansky, Andrew Camann, Ruth Keri, David L. Wilson, Efstathios Karathanasis

Case Western Reserve University

114. The synthesis of the sigma ligand PD14418 and analogs for biological evaluation

Shannon Stittsworth, John R. Lever, Susan Z. Lever

University of Missouri



115. Ultraviolet light stimulated cationic lipid charge reversal for siRNA and DNA delivery

Joseph S. Hersey, Dr. Caroline M. LaManna, Dr. Hrvoje Lusic, Dr. Mark W. Grinstaff

Boston University

116. Development of a Physiologically Relevant In Vitro Model of the Blood-Brain Barrier

Jack D. Wang, Nick J. Douville, Shuichi Takayama, Mohamed E.H. ElSayed

University of Michigan

Biophysics

117. Formin regulation at the barbed ends of actin filaments

Jeffrey P Bombardier, Bruce Goode, Jeff Gelles

Brandeis University, Dept of Biochemistry

118. PGC-1 alpha affects action potential conduction and morphology in neonatal rat ventricular myocytes

Geran Kostecki, Gordon Tomaselli

Johns Hopkins University

119. Single-Turnover Stopped-Flow Fluorescence Applied to ClpAP Catalyzed Polypeptide Translocation

Justin M. Miller, Tao Li, Aaron L. Lucius

University of Alabama at Birmingham



120. Modeling Stretch-Induced Release of Molecules in the Actin Cytoskeleton

John Kang, Kathy M. Puskar, Philip R. LeDuc, Russell S. Schwartz

Carnegie Mellon University

121. Optogenetics and Sleep

Peter Dahlberg, Sean Gibbons, Vu Quoc Dinh, Kristen Hitchcox, Daniel Kerr, Boleslaw Osinski, Guillermina Ramirez, Adam Hammond

University of Chicago

122. Threading a Protein Sequence onto its CryoEM Density Map

Charles Greenberg, Keren Lasker, Andrej Sali

University of California, San Francisco

123. Lef1-mediated up-regulation of Epac1 expression in Chronic Lymphocytic Leukemic Cells

Loren Brown, Fiona Murray, Lingzhi Zhang, Paul Insel

University of California, San Diego

124. Motile Droplets: Active 2D Nematics on a Spherical Surface

Stephen J DeCamp, Tim Sanchez, Daniel T. N. Chen, Zvonimir Dogic

Brandeis University



Systems Biology

125. Interdisciplinary Approach to Discovering Novel Natural Products from Cave Bacteria Communities

Ara Kooser, Dr. Charles E. Melancon, Dr. Diana Northup
Univeristy of New Mexico

126. Cluster analysis of Prochlorococcus gene abundance from widely distributed oceanic samples

Alyssa Kent, Adam Martiny
University of California, Irvine

127. Effects of Fc Density and Microparticle Size on Macrophage and Complement System Activation

Patricia M. Pacheco, David White, D.V.M., Ph.D., DACVM, Todd Sulchek, PhD
Georgia Institute of Technology

128. ATP-Mg salt and Oxygenated Perfluorocarbon Protects the Intestinal Mucosa during Gut Ischemia

Marisol Chang, Pedro Cabrales, Geert Schmid-Schönbein
University of California, San Diego, Dept. of Bioengineering,

129. Assessing Phenotypic Convergence in Genetically Divergent Subsets of Heat-tolerant Escherichia coli

Shaun Hug, Brandon Gaut, Anthony Long
University of California, Irvine

